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## CEREMONIAL OBJECTS AND ORNAMENTS FROM PUEBLO BONITO, NEW MEXICO

By GEORGE H. PEPPER

### INTRODUCTION

In northwestern New Mexico there is a group of ruined pueblos that stretch for miles along the fertile valleys and mesa tops. The Chaco cañon proper contains the major portion of these ruins, one of the greatest of which in point of interest is Pueblo Bonito. The writer visited and explored parts of this ruin in the summer of 1896, and the investigations were continued thereafter for several years. This work, which was made possible by Mr B. T. B. Hyde and Mr F. E. Hyde, Jr, of New York city, was planned by Prof. F. W. Putnam, and the material collected is now in the American Museum of Natural History.

Pueblo Bonito is near the western end of the cañon and may be reached by driving 65 miles northward from Thoreau, a station on the Santa Fé Pacific railroad, near Gallup, New Mexico. It was one of the homes of an ancient sedentary people who grouped their houses into great many-celled structures and surrounded them with a strong defensive wall, thereby making the town a fortress as well as a place of habitation. Pueblo Bonito, like the other ancient settlements in the cañon, is now in ruins, and many of the rooms are completely covered with debris and drifted sand. The building as a unit measures more than 500 feet in length; the lesser axis is somewhat more than 300 feet. It is semicircular in form, the rounded portion enclosing the structure on the east, north, and west, while the southern side was protected by a straight wall of heavy masonry. The stones used in the building were taken from

the adjacent sandstone cliffs, the work of quarrying being greatly facilitated by the natural cleavage.

The age of Pueblo Bonito is still in doubt, but nothing was found during its excavation to show that its former occupants ever had intercourse with the Spaniards. The first mention of the pueblo was made by Josiah Gregg,<sup>1</sup> in 1844. Since that time it has been visited by soldiers and travelers, and several descriptions of it have been written. Gen. James H. Simpson<sup>2</sup> and Mr William H. Jackson<sup>3</sup> made careful studies of the ruin and published accounts in 1850 and 1878, respectively.

#### POSITION OF ROOM 38

During the season of 1896 we were enabled to uncover a series of rooms extending along the outer wall of the northern part of the ruin. The major portion of this first year's operations was confined to the north central and northwestern parts of the pueblo, although a sufficient number of rooms were opened in other portions to furnish data concerning the style of masonry of the upper series and also of that of the underlying ones. The results of these excavations governed to a large extent the plans for the work of the succeeding season. Owing to the great size of the ruin, little could be accomplished in one season of field work; it was therefore a question of obtaining a representative collection of objects, together with sufficient data concerning the older portions of the pueblo to enable us to gain an idea of the duration of the period of occupancy.

The first work in 1897 was the continuation of excavations in a row of rooms constituting the third series of the northern or curved part of the building. The debris was removed from the western extension of this series, and some very interesting specimens were found on the floors. One of the first rooms to receive attention during this season was that designated No. 38 in the field notes. Its position may be seen in the accompanying illustration (plate XVIII).

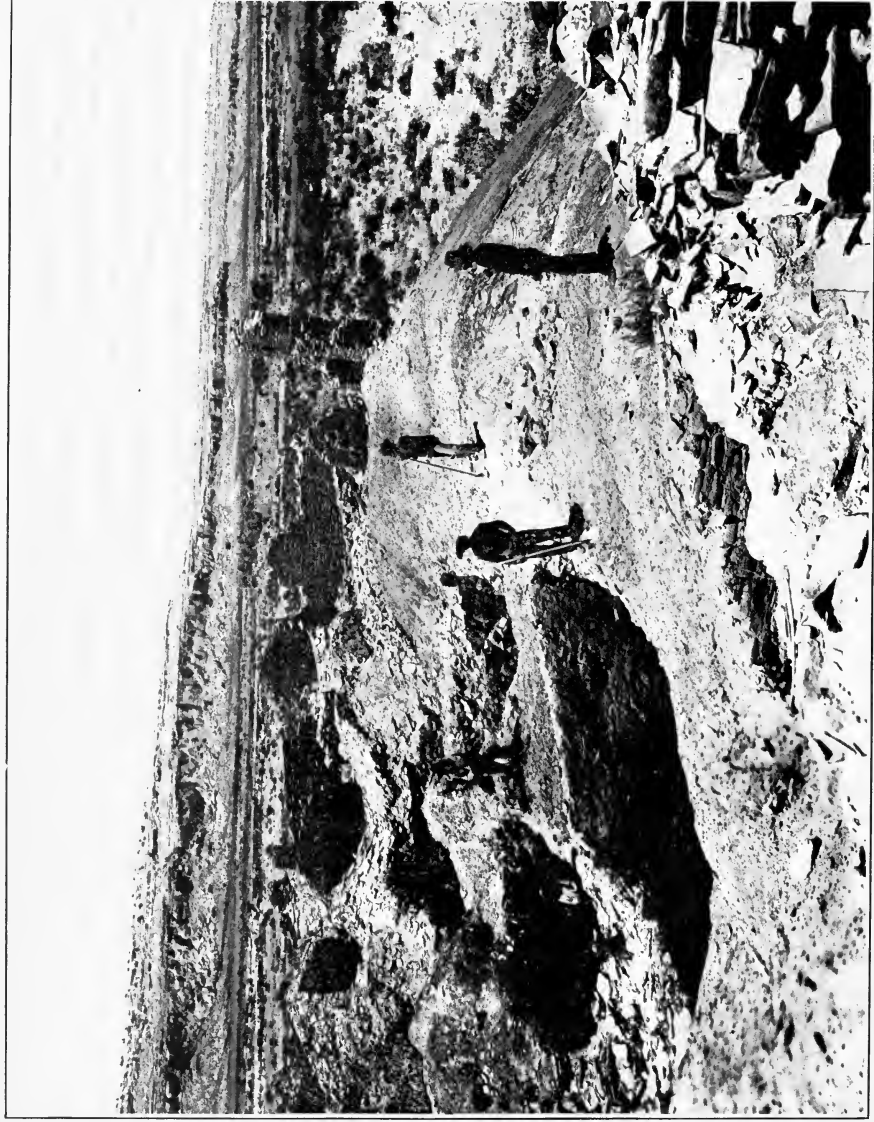
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<sup>1</sup> Josiah Gregg, *Commerce of the Prairies*, I, 284-85, 1844.

<sup>2</sup> J. H. Simpson, *Journal of a Military Reconnaissance from Santa Fe, New Mexico, to the Navajo Country*, Washington, 1850.

<sup>3</sup> Wm. H. Jackson, *Ruins of the Chaco Cañon, Examined in 1877*; Tenth Rep. Hayden Survey, pt. III, Washington, 1878.





WESTERN END OF PUEBLO BONITO — ROOM 38 IN THE FOREGROUND



Room 38 was generally rectangular; its north and south walls were curved, but not to an appreciable extent. The room was filled with debris consisting of sandstone slabs from the fallen walls, decaying ceiling beams, and the adobe floors of upper rooms with whatever objects were on them when they gradually weakened and finally collapsed. On this account many objects of scientific interest were broken or scattered through the debris.

#### THE PLATFORM CONTAINING CEREMONIAL OBJECTS

The work in room 38 brought to light an interesting collection of material, the greater part of which was of a ceremonial character, or at least might have been used in sacred observances.

The eastern end of the room was excavated to a depth of several feet and the work was then carried westward. Nothing of particular interest was found in the upper layers, but the removal of the stones and the fallen beams was still in progress when a platform was uncovered. The first evidence of this structure was a peculiar projecting wall, six inches thick and extending in a north-westerly direction. It was attached to the south wall and had been used as a support for a beam that entered the north wall at a point opposite. The western support of the platform was upheld by posts, but these and the poles that had formed its upper surface were no longer in position; they had been crushed by the weight of the debris and, when uncovered, were greatly decayed.

#### CEREMONIAL OBJECTS IN SITU

One of our Navaho laborers was excavating in the western part of the room and had reached the point where the fallen masonry ended, when he encountered the first evidence of a ceremonial deposit. At the end of a horizontal stroke we noticed that the Indian had broken an object of bone, and investigation showed that it was inlaid with turquoise and jet. The extremities of the bone had been shattered, but fortunately the mosaic itself had not been injured.

The utmost care was necessary in uncovering this specimen and the objects that surrounded it. When the brush and stylus had removed the sand from about the bone, it proved to be of the so-

called scraper form. It had been completely covered with drift-sand and was lying with the blade pointing toward the west. Directly south of and almost touching this scraper was another of similar shape and size. The first one was lying with the rounded portion upward, whereas this rested upon its convex surface. It was observed that the second scraper had also been inlaid, but owing to the fact that the inlaid surface was downward, there was no support for the tesseræ and most of them had fallen out.

For convenience the field numbers will here be used in referring to the scrapers and the objects found with them. The first scraper will be known as No. 9 and its companion as No. 10. In plate XIX these mosaic pieces are shown in situ with the smaller specimens grouped a little to the north of them. The first object uncovered near the scrapers was a pendant of turquoise (No. 11); it was two inches east of and opposite the central portion of No. 10. The next specimen, also a turquoise pendant (No. 12), was found an inch west of No. 10, in the angle formed by the two scrapers. Both of these pendants were at the level of the lower surface of the scrapers. A depth of several inches was reached before the next object was found; but the remaining specimens will be considered according to the arbitrary numbering of the field notes instead of allowing their depth to govern the sequence.

No. 1 is a bird form, made of decomposed turquoise; it was found below the level of the scrapers and is in good condition. No. 2 is also a bird form; it was three inches below the level of No. 9, and was lying on its left side, the head pointing toward the north. No. 3, a turquoise pendant, was found near No. 2. No. 4 is the third bird form that was uncovered; it was resting in a natural position, with the head pointing southward, at a depth of an inch and a half lower than the scrapers. No. 5 is another turquoise bird; it was found six inches below No. 9, and was lying with its head toward the northeast. No. 6 is the tail portion only of a bird of turquoise and was found four and a half inches below the level of No. 9. Several fragments of the same bird were found in the surrounding sand. Nos. 7 and 8 are beads made of jet; they were found six inches below the scrapers. As the four succeeding numbers, the scrapers and pendants, have been noted, and as they will



INLAID SCRAPERS AND OTHER CEREMONIAL OBJECTS IN SITU



be treated more in detail when the esthetic aspect of the specimens is considered, No. 13, which is a large slab of jet perforated for suspension, will now be referred to. This specimen was found only half an inch northwest of No. 4, and the largest fragment was on the same level. Specimens 11, 12, and 13 are not shown in the photograph. Of the remaining objects, Nos. 2, 3, 4, 5, and 6 are in situ; Nos. 1, 7, and 8 were removed in the work of uncovering the other specimens, but were replaced within an inch of their original positions.

#### THE INLAID SCRAPERS

Bone implements of the type represented in the accompanying photograph (plate XIX) are found throughout the ancient Pueblo region of the Southwest. They are known by several names, the most usual of which is "bone scraper," and this term will here be employed. They are generally made from the humeri of deer, elk, or antelope, and are found of all sizes. The average is about six inches, but they range from two to eight inches in length, and of relative width.

Pueblo Bonito has furnished a large number of specimens of this particular type of implement, and from its occurrence throughout the pueblo it would seem to have been an object of general use. The refuse heaps, and the rooms that had been abandoned to become receptacles for the sweepings from the houses, contributed a good share of these implements in the collection. Almost all of them showed use and many were broken.

The bone scrapers from Pueblo Bonito were rarely decorated; but when ornamentation occurred, it was generally in the form of incised designs, such as cross-hatching, meanders, and animal forms. There is but one specimen similar to the incrustated ones which we are about to consider. It was found in a fragmentary condition in Room 170, but there are evidences that it had been prepared for the reception of an inlay similar to that shown in the colored frontispiece. This specimen is shown in figure 3.

The inlaid scraper as represented by the colored plate is slightly reduced in size. It is the distal or elbow end of the humerus of one of the large ungulates, the animal being either a large black-tail deer or a small elk. In preparing the bone for the reception

of the inlay, the usual method was no doubt employed. A groove was cut with a stone knife in one side of the humerus, and the cut extended until it encircled the bone. This process was continued until the bone could be broken apart. The cutting away of the under side was the next step. This was accomplished by grinding, and the final touches to the edges were given with a polishing stone. In scrapers designed for every-day use, no further work was done ; but as this particular specimen was intended for an especial use, the maker next turned attention to the handle end. The condyles in their natural state protrude to such an extent that the symmetry of

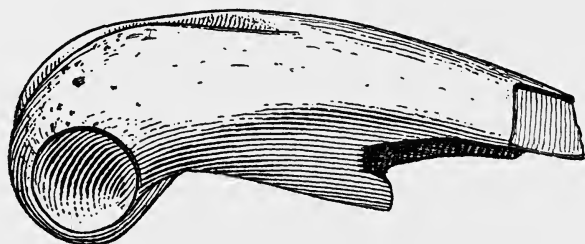


FIG. 3.—Scraper prepared for inlaying. (Natural size.)

the object is affected, hence these were ground until perfectly rounded, and presented, as viewed transversely, a cylindrical aspect, due to the careful rounding of the under parts of the side condyles. The entire surface of the epiphysis was ground, reducing its size considerably.

In preparing for the work of incrustation, a broad band was cut in the convex surface of the bone, extending from edge to edge of the flattened part. This groove was 2 cm. 4.5 mm. in width, and was worked to such depth as would cause the tesserae to correspond with the general surface of the bone. The sides of the cut were trued and the groove was then ready for the inlay.

Piñon gum seems to have been the medium for seating the small pieces of stone and shell. A layer of this material was spread upon the bottom of the cut, and upon this foundation the mosaic pattern was developed. In the scraper under consideration fifty-six pieces were used in the work ; of these, twenty were elongate pieces of jet ; there were sixteen pieces of turquoise of the same shape, ten pyramidal pieces of turquoise, and ten pieces of red gum,

pointed, as were the turquoise pieces last named, and made to match these inlays, thereby forming a flat finish at the end of the band. When the inlaying was completed, the surface of the mosaic, as well as that of the bone, was polished.

In examining the design and execution of this implement one cannot fail to observe that its maker had an excellent appreciation of decorative art. The jet and turquoise bands are placed systematically, while the colors are alternated either for ceremonial symbolism or for artistic effect. These inlaid bands are composed of carefully shaped pieces, being not only rectangulated but concavo-convexed in order that they may conform to the rounded surface of the bone. There are five such bands, three of jet and two of turquoise, and these are bordered by a serrated line of turquoise composed of a series of pyramidal pieces, each so accurately pointed by grinding that they give a beautiful finish to the highly decorative band. The corresponding inlays of red gum are in strong contrast

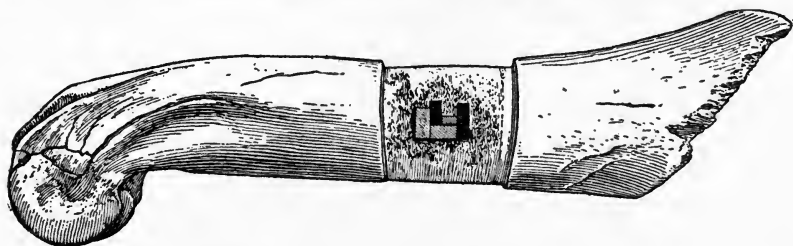


FIG. 4. — Bone scraper (No. 10) showing remnant of mosaic.

to the pointed pieces of turquoise, and impart a richness in finish that is almost unique in aboriginal American handiwork. The care with which the inlays were adjusted is worthy of note. The bone is but 2 cm. 7 mm. in width, and many of the sets are quite elongate, but they were embedded in the gum in such a way that their edges match perfectly, while the contour of the bone is carefully preserved.

The second scraper, No. 10 (figure 4), is practically a duplicate of the one just described. When found, five of the tesserae, three of turquoise and two of jet, were in place. From their position and general arrangement it would seem that the design had been in the form of a half-meander or an interlocking fret. Beneath the scraper

were found nine jet and twenty-seven turquoise tesserae. This comparatively large number of turquoise pieces may be accounted for by the fact that some of the jet pieces are two to three times longer than the average sets of the other material. This scraper is 15 cm. 5 mm. long, and is in perfect condition. The groove that held the mosaic is 2 cm. 6 mm. wide and averages 2 mm. in depth. The loss of the design is compensated by the fact that we have been enabled to observe the finish of the bottom of the cut which was left rough in order that the piñon gum might the more firmly adhere.

Whatever the use of these scrapers, it may safely be assumed that they were made for ceremonial purposes. With the other objects found on the platform they may well have formed a part of the altar paraphernalia of some religious society. There is convincing evidence that the room in which they were found belonged to a macaw or possibly to a parrot clan, but this phase of the subject must be considered in another paper.

#### THE JET FROG AND THE JET BUCKLE

The exact positions occupied by the jet frog and the buckle, which are shown in the colored plate, are not known. These incrustated objects were stolen by the Navaho Indian who was working at the platform end of the room and who was alone when the pieces were found, hence could not resist the temptation of appropriating them. The specimens were recovered before they had been harmed in any way, however, and the man who took them pointed out the positions where they were lying when he uncovered them. As there is no certainty concerning a stated position in a room that has been excavated, the positions of these jet pieces will be omitted; it is sufficient to say that they came from a point a few inches above and quite near the inlaid scrapers.

When the stolen objects were returned, the jet buckle exhibited four depressions that at one time contained circular inlays; and in these corner depressions there still remained thin beddings of piñon gum the appearance of which indicated that some of the sets had probably been in place when the buckle was found. We therefore examined the turquoise and jet inlays that had been found on the



platform, and were rewarded by the finding of two turquoise disks that fitted the depressions in the buckle. One of the holes was almost devoid of gum, but the setting which conformed to it in outline retained a coating of this material which raised it to the proper level and caused it to fit perfectly. A second depression contained practically all the gum that had been used in seating the inlay, and in this condition its surface was smooth and slightly concave. The corresponding setting was double convex in form, absolutely free from gum, and highly polished: its surface presented no hold for the gum, and, in falling out, only small particles were carried with it. The joint made by the turquoise and the socket was perfect, hence there was no doubt that it had found its original position. Unfortunately the sets from the other two corners were not recovered. Whether they were overlooked in examining the sand from the platform, which does not seem possible, or were lost by the Indian while the buckle was in his possession, could not be determined.

This jet buckle is shown in the colored plate with the turquoise sets in place. In the painting from which the plate was made the specimen was faithfully copied and as now presented is almost of natural size; the various details of carving, surface finish, and inlay may therefore be readily described. The specimen is 8 mm. thick, and the surface measurements show it to be 5 cm. 6 mm. by 5 cm. 1 mm. The under part has a groove which crosses the specimen midway at its shorter axis, and spanning the groove are two bridge-like pieces carved from the original piece of jet. The openings beneath these spans, together with the groove, served as a means of fastening the buckle to a garment or the like. One of the spans was broken evidently while the buckle was in use, and the sides of the break had been drilled to form a new opening, which in turn was also broken but never repaired. There is still a good polish on the surface of the buckle, but it has crackled either from heat or from age; in all other respects it is well preserved.

This ceremonial object is termed a buckle for the sake of convenience. It may have been used in connection with a sash or other piece of clothing, but from its association it would seem rather to have been used as a head or breast ornament in ceremonies.

The frog figure accompanying the buckle in the illustration is carved from a piece of jet. The body of the animal is beautifully rounded, and the legs, which stand out in relief, their bend faithfully portrayed, and the toes represented by means of deep grooves, are very well formed. The mouth has the full rounded shape seen also in frog-shaped pottery vessels from the Chaco; and the eyes, consisting of two large pieces of turquoise, firmly set and highly polished, stand boldly out in a manner characteristic of the frog even in conventionalized Indian art. Across the neck there is a broad inlaid band of turquoise, consisting of seven tesserae that conform to the general level of the jet. One of the triangular sets that formed the ends of the band is missing.

The body of the frog has been polished, but it is now crackled to some extent, and on the under surface there is evidence of the action of fire; enough of the original polish remains, however, to convey a good idea of what the appearance of the object must have been when it was new.

The body of the frog is 1 cm. 7.5 mm. thick, 8 cm. 1.5 mm. long, and 6 cm. 5 mm. wide. The width, including the legs, is 7 cm. 1.5 mm. The balls of turquoise that form the eyes are 8.5 mm. in diameter and 3 mm. in height. The object was drilled for suspension, the holes being on the under part directly beneath the inlaid band. The incision made to receive the turquoise pieces forming the band was cut just deep enough to allow them to sink to the level of the surface, save at the ends where it was cut through to the opposite side. At these points the openings were triangular, and in cutting them through a separation was formed between the feet and the body, the parts being joined again at the point where the head and the toes meet.

The frog or the toad is a symbol of water among the Pueblo people of to-day, and there are numerous evidences tending to show that the same water symbol was employed by the ancient inhabitants to as great an extent as by their descendants. In Pueblo Bonito and in nearby villages it has been found in the form of pottery vessels, as well as carved from pure turquoise and scratched on stone slabs. Tadpole figures, which are also water symbols, are likewise represented in turquoise and pottery.

## JET PENDANT, BEADS, AND BUTTONS

The largest jet pendant known to have been found in the Southwest was recovered from the same deposit. It is in a fragmentary condition, but enough pieces were recovered to give a general idea of its size and appearance when complete (figure 5). It is 9 cm. 2 mm. long, 6 cm. 6 mm. wide, and 1 cm. 1 mm. thick. The corners are rounded and it is of uniform thickness. The fragments were scattered through the debris, but the largest piece was lying half an inch northwest of and at the same level as specimen No. 4. This pendant was also drilled for suspension, the perforation being made through the edge as shown in the illustration, thus leaving the front surface unbroken. In view of the fact that the jet frog and the buckle are in a perfect state of preservation, so far as their completeness is concerned, it is difficult to account for the cracking and splitting of this pendant. From its present appearance and from the scattered fragments it would seem that it was broken or was in a very fragile condition when left on the platform.

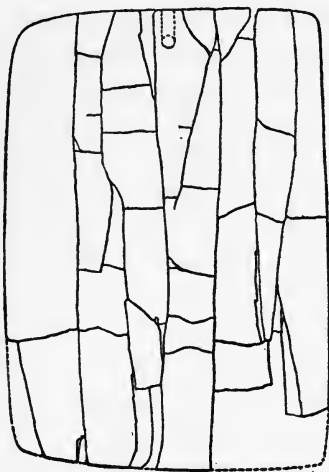


FIG. 5. — Jet pendant repaired.  
(Two-thirds natural size.)

Pendants of this shape are not uncommon in the Pueblo area, but the specimen under consideration is exceptionally large. The material from which the latter was cut was used by the ancient Pueblos in making small objects of jewelry, but it was not the practice to employ large pieces even in fashioning ceremonial objects. This pendant was probably used as a breast ornament, either alone or in connection with the necklace of jet and shell beads found near it.

Beads of different sizes were scattered through the sand in which the larger objects were lying. In removing scraper No. 10, the depression in the handle end was found to be filled with sand, imbedded in which were eighty small jet beads, 2 mm. in diameter

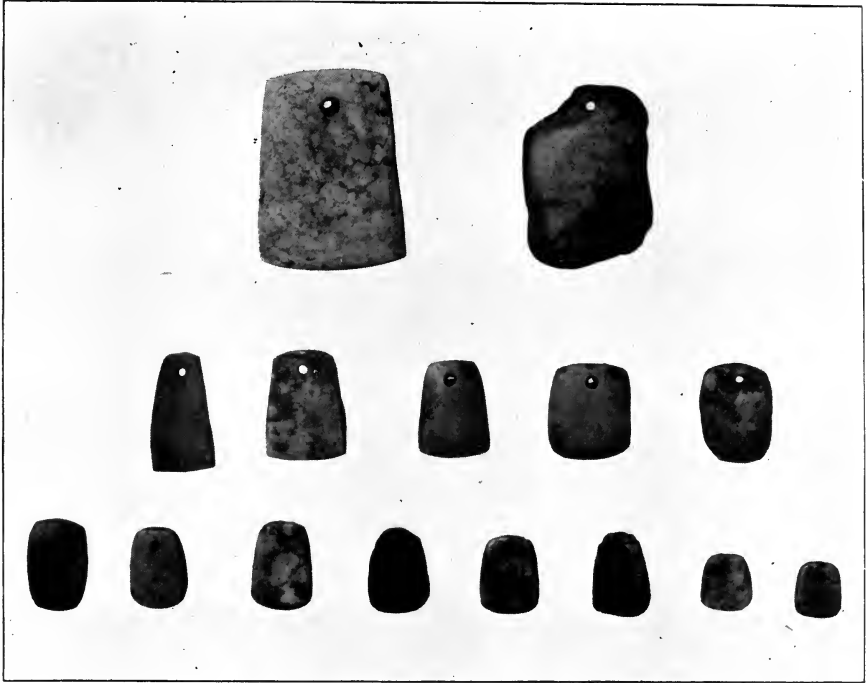
and averaging 1.5 mm. in thickness. In the debris surrounding the scrapers 313 beads of the same material and of the same size and shape were found. Associated with these beads were 46 that measured 3 mm. in diameter, but in other respects they were identical to the smaller ones. With these jet beads there were 19 white ones, made of stone and shell, and of the same size and shape as the others.

In plate XIX two black objects (No. 7, 8) are shown in the foreground; these are the jet buttons mentioned in the general description of the contents of the deposit. In form they are oblate spheroidal. No. 7 averages 1 cm. 5 mm. in diameter, and No. 8 is only 1 mm. larger. The former is almost free from flaw, whereas its companion has a broad check line spanning the upper part. Both are perforated on the flat side, and they may have been used as garment ornaments or as pendants. A third button, or perforated ball of jet, was obtained from an Indian who had worked in this room, and had probably been stolen with the other objects above mentioned.

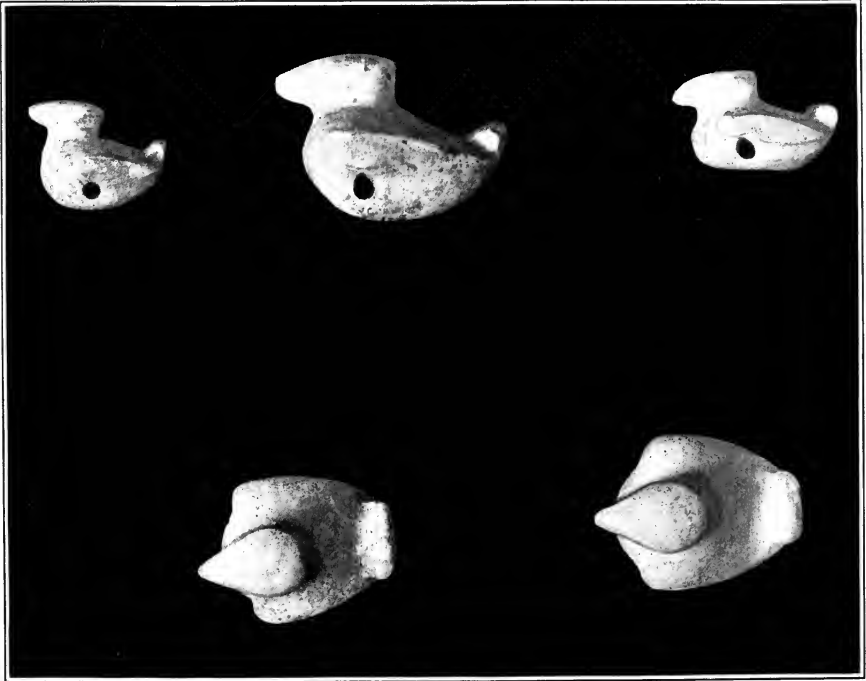
#### THE TURQUOISE BIRDS

Of the five bird forms found in Room 38, four were perfect and the fifth was represented by several fragments, the largest being the tail end (plate xx, *b*). These birds are cut from decomposed turquoise, and in color are pale bluish green. There is practically no variation in the eight specimens of the type found in Pueblo Bonito. The material from which the birds are carved is so soft that it can be cut with a knife. The figures were probably roughed out with one of the many forms of stone implements, and then ground to the desired shape with sandstone grinders. On the surface of some of the birds may be seen fine lines which, under a glass of low power, have the appearance of file scratches; they are nevertheless the marking made by the sandstone polishers. Lines of this character are in evidence on many of the stone implements found in this region, and are especially noticeable on objects of wood.

Over the surface of each of these five turquoise specimens there is a dull red patina. There are evidences of the matrix in some pieces, but the surface color seems to be due to soil discoloration. In the other three bird forms found in this ruin by the Navaho



A. TURQUOISE PENDANTS (SLIGHTLY REDUCED)



B. TURQUOISE BIRDS (NATURAL SIZE)



workmen, there are indications of this discoloration, but the greater part of it had been removed by carrying the objects about in their medicine bags or in using them as pendants on their necklaces. The head, tail, and wings of the birds are indicated in each instance. The variety represented is doubtless a water fowl, probably the duck, the poise of the head and the general angle of the body suggesting the appearance of a duck when resting on water. This form of bird seems to have been a favorite one with the sedentary people of the Southwest. From Pueblo Bonito alone it is carved from red hematite and stone, and in some Chaco ruins it has been found carved from pure turquoise, shell, and jet. In southeastern Utah, in the Grand Gulch region, some of the large basketry meal trays have a line of these bird figures as a decorative element; and in one of them the design is associated with the butterfly.<sup>1</sup> The largest bird (No. 2) is 2 cm. 7 mm. long, and 2 cm. 1 mm. wide. The smallest (No. 1) is 1 cm. 7 mm. long, and 1 cm. 3 mm. wide. These measurements do not include the projecting beaks, which vary in size in the different pieces, all of them being proportionate to the size of the body. The tails and wings are carved in relief, and all the specimens have lateral perforations below the front or shoulder portion of the wings. The position of the holes causes a top-heaviness when the birds hang free, but against the body they maintain the proper angle, hanging with the head upward.

#### TURQUOISE PENDANTS AND BEADS

There were fifteen turquoise pendants associated with the larger objects herein described (plate xx, *a*). Two of these are quite large, but the others are of medium size. The largest, No. 3, may be seen near the turquoise bird No. 2 (plate xix), on a slight elevation northeast of the scrapers. It is 3 cm. 4 mm. long, with a width of 2 cm. at the top and 2 cm. 5 mm. at the bottom, tapering gradually to the rounded base. In color it is delicate blue. The polished surface shows an interlacing of matrix lines, and the back, with the exception of a very small space in the upper right-hand corner, is a layer of brown trachyte—the rock in which the turquoise is found. The pendant has a thickness of 5 mm.; the edges have been

<sup>1</sup> Geo. H. Pepper, *The Ancient Basket Makers of Southeastern Utah*, pp. 13, 15.

smoothed and polished, and there is a perforation in the upper part. The drilling in this specimen, which is at an angle, with the larger opening on the turquoise side, is the most irregular that has been found in the turquoise work from Pueblo Bonito. The most remarkable feature of the specimen is its color, which is very light as compared with the other specimens from this room, whose prevailing shades range from dark blue to dull olive green. The light blue seen in the turquoise of commerce is seldom found.

Of the remaining fourteen pendants the largest is 3 cm. 1 mm. long, and the smallest 9 mm. They vary in shape and thickness, but are typical of the forms found in the various rooms of Pueblo Bonito, as indeed throughout this entire culture area. Other objects of turquoise were 106 flat circular beads and one small tessera. The beads ranged from 3 mm. to 6 mm. in diameter, and averaged 1.5 mm. in thickness.

In removing the small material, a peculiar ball-shaped object was brought to light. It seemed to be composed of fine brown meal, but mixed with it were minute particles of turquoise, shell, and jet. It had been retained in some perishable material that had entirely disappeared, but the rounded form was well defined. The ball, which was a little more than an inch in diameter, fell apart when it was taken up, but the material which composed it was preserved. In examining the contents, five small jet beads were found, also three fragments of jet beads of the larger size. The grindings preserved in this specimen were undoubtedly from the ceremonial objects that have been described. The practice of caring for waste material in the manufacture of ceremonial paraphernalia is well known among the modern tribes of the Southwest. Such refuse, as a rule, is deposited in accordance with ritualistic laws, but in this case, owing to the fact that the material was precious, it was no doubt kept for use in connection with other secret "medicines" in pieces of folded skin or in buckskin bags.

#### CONCLUSIONS

The ceremonial implements and ornaments that have been considered are extraordinary only as evidence of the development of an art known to most of the ancient Pueblo dwellers. Incrustation of



sacred ornaments or other objects by the ancient sedentary people of the Southwest has been known for a number of years. From the Gila region in southern Arizona there are several such specimens in the Hemenway collection of the Peabody Museum at Cambridge, Mass. Private collections in New Mexico and Arizona also contain objects of jet and shell ornamented with turquoise, and Dr Fewkes obtained one, in the form of a frog, during his excavation of the Chaves Pass ruins in Arizona. Of this specimen Dr Fewkes says: "The most beautiful ornament or fetish of shell incrustated with turquoise was found at the smaller of the two ruins at Chaves Pass. It was a specimen of *Pectunculus giganteus* covered with gum, in which were inlaid rows of turquoise nicely fitted together in the form of a frog or toad. As an example of mosaic work, this object is the only veritable mosaic known to me from ruins in the Southwest."

The researches of Fewkes, Cushing, Hough, and other students have demonstrated that large incrustated objects are seldom found. Pueblo Bonito has furnished the major portion of known examples from the Southwest. Future investigations in this ruin and others of the Chaco group should add materially to our knowledge of the esthetic side of primitive Pueblo life.

AMERICAN MUSEUM OF NATURAL HISTORY,  
NEW YORK CITY.



